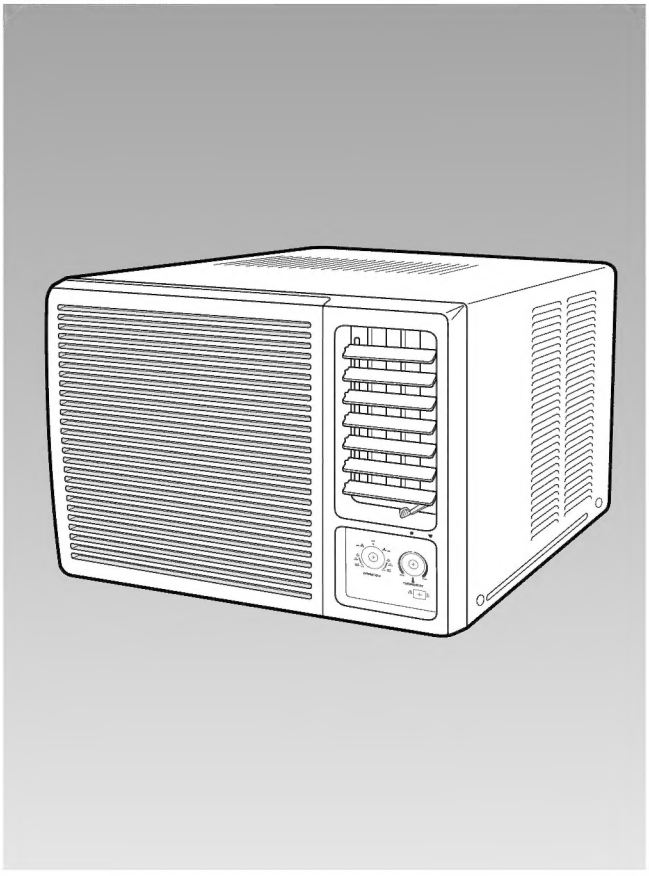
SAMSUNG

ROOM AIR CONDITIONER

AWH120J E/123J E

SERVICE Manual

AIR CONDITIONER



CONTENTS

1. Precautions
2. Product Specifications
3. Installation and Operating Instructions
4. Disassembly and Reassembly
5. Troubleshooting
6. Exploded Views and Parts List
7. Block Diagram
8. Wiring Diagram

© Samsung Electronics Co., Ltd. MAR. 1998.
Printed in Korea.
Code No. DB81-10151A(1)

1. Precautions

1. Warning: Prior to repair, disconnect the power cord from the circuit breaker.

2. Use proper parts: Use only exact replacement parts. (Also, we recommend replacing parts rather than repairing them.)

3. Use the proper tools: Use the proper tools and test equipment, and know how to use equipment may cause problems later-intermittent contact, for example.

4. Power Cord: Prior to repair, check the power cord and replace it if necessary.

5. Avoid using an extension cord, and avoid tapping into a power cord. This practice may result in malfunction or fire.

6. After completing repairs and reassembly, check the insulation resistance, Procedure: Prior to applying power, measure the resistance between the power cord and the ground terminal. The resistance must be greater than 30 megohms.

7. Make sure that the grounds are adequate.

8. Make sure that the installation conditions are satisfactory. Relocate the unit if necessary.

9. Keep children away from the unit while it is being repaired.

10. Be sure to clean the unit and its surrounding area.

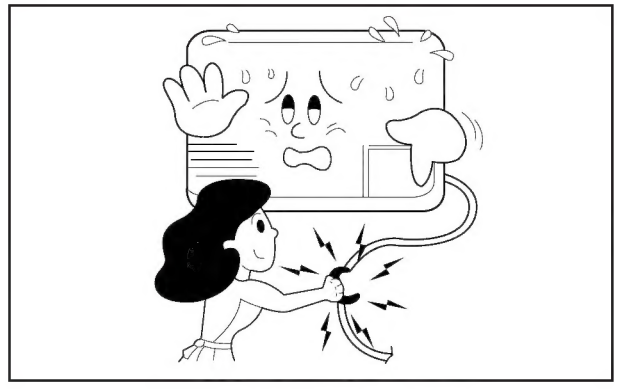


Fig. 1-1 Avoid Dangerous Contact

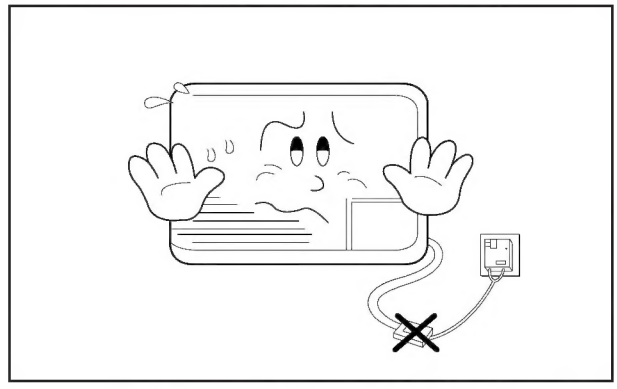


Fig. 1-2 No Tapping and No Extension Cords

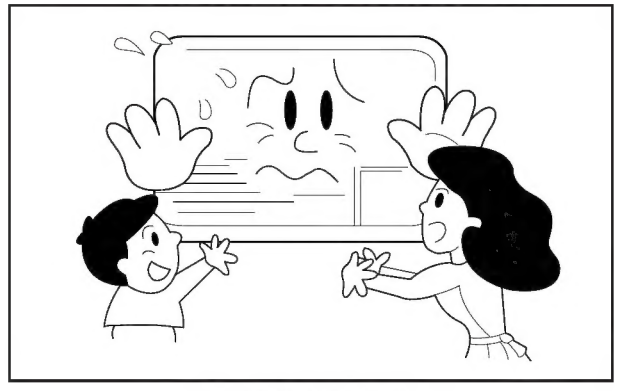


Fig. 1-3 No Kids Nearby!

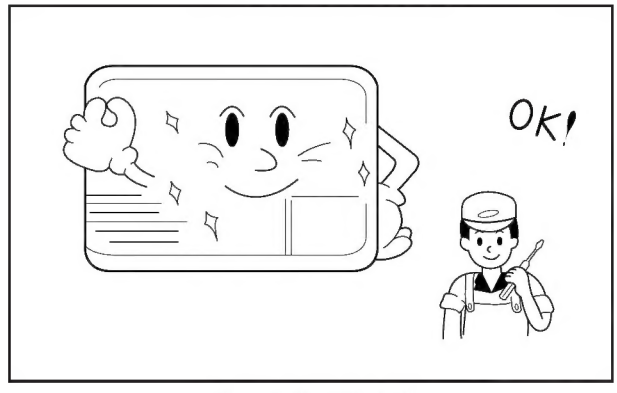


Fig. 1-4 Clean the Unit

2. Product Specifications

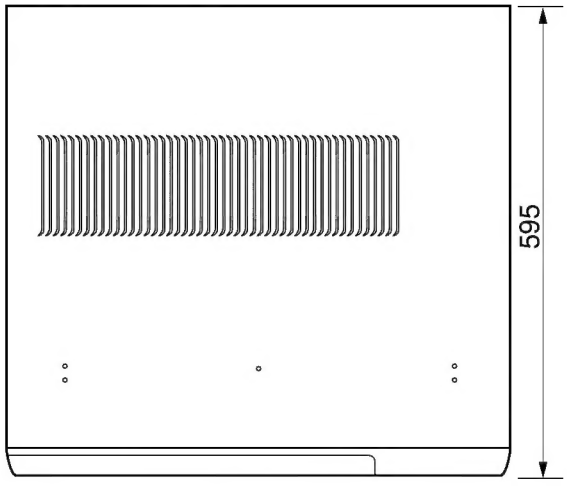
2-1 Table

Item	Unit of Measure	AWH120J E/123J E(COOL/HEAT)	Remarks
Type	-	Window	
Dimensions: (Width X Height X Depth)	mm	600 X 394 X 555	
Packing Size (Width X Height X Depth)	mm	699 X 441 X 638	
Voltage:	Volt	220 ~ 240	
Phase	-	Single	
Frequency	Hz	50	
Operating Current	A	5.9 / 5.3	
Power Consumption	W	1,350 /1,210	
Refrigerant Type	FREON	R-22	
Refrigerant Charge	g	680	
Cooling Capacity	BTU/h	11,500 / 11,500	
EER	BTU/h.W	8.5 / 9.5	
Net Weight	kg	45	
Condenser	Row	2 X 14	
Condenser Fan	Type	Propeller Fan	
Evaporator	Row	2 X 14	
Evaporator Fan	Type	Blower	
Fan Motor	W	AMAFS100ATEA	
Compressor(Rotary)	Model	48H124J V1E4	
Overload Protect	-	MRA12030-12008	
Compressor Capacitor Fan Motor Capacitor	µF/ VAC µF/ VAC	30 / 450 3.5 / 450 DUAL TYPE	
Fan Speed Control	-	Fan speed switch (High & Low)	
Thermo Control	-	Thermostat	

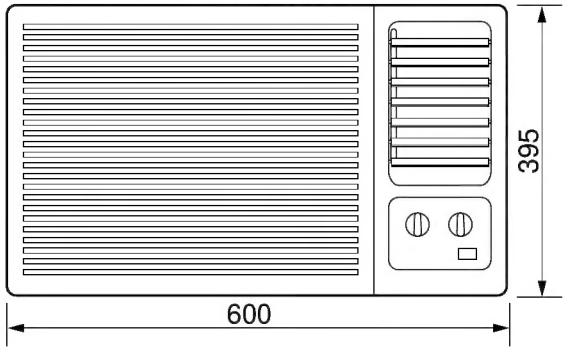
2-2 Dimensions

2-2-1 Main Unit

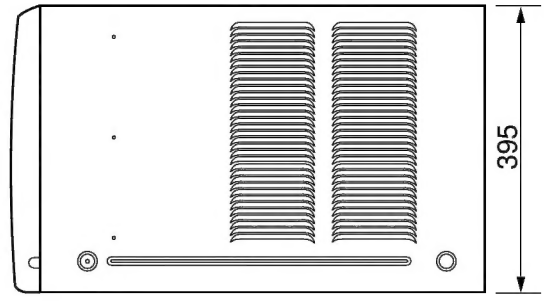
Unit : mm

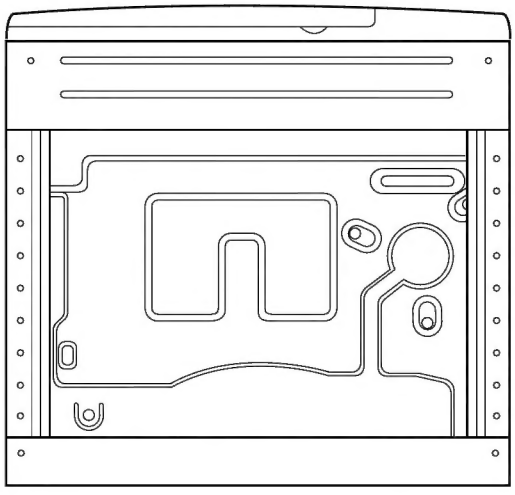


Front view



Side view





5. Troubleshooting

	Procedures
1	Check to see whether the electric circuit or electric parts are damaged before repairing the air conditioner.
2	Conduct the following generally to check whether the electric circuit or other electric parts are damaged.

5-1 Troubleshooting Method and Precautions

5-1-1 Checking of power source

Check to see whether the voltage of the power source is 220 ~ 240V, 50Hz.
The air conditioner may not operate properly if the voltage is out of this range.

5-1-2 Check the parts that be weak or fragile

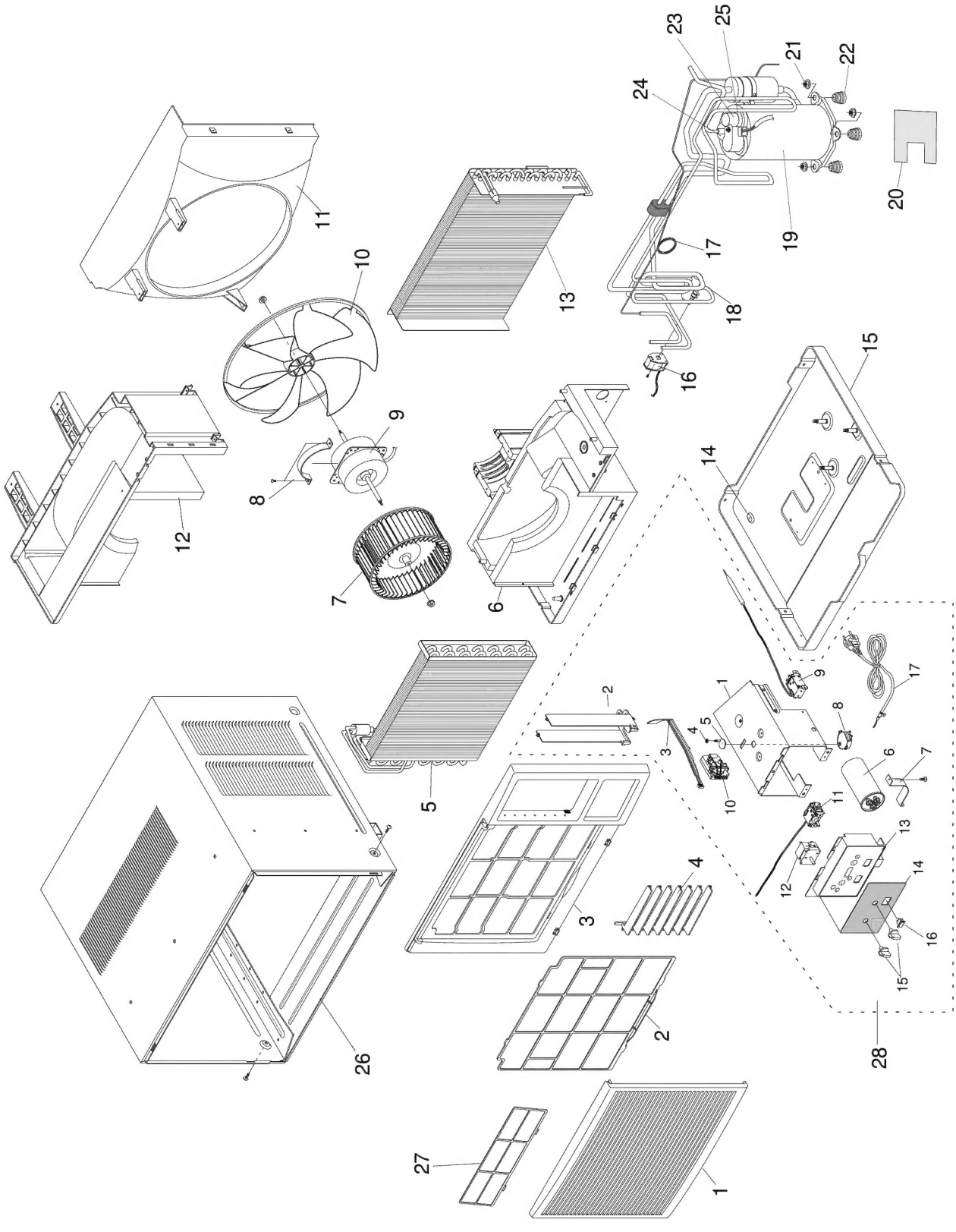
5-1-3 Check the terminals for proper connection

5-1-4 Refer to the table below when there is any malfunction;

No	Trouble	Checkpoints	Possible cause
①	The compressor does not operate.	1. Check the position of the thermostat. 2. Check the position of the select switch. 3. Check the connection of the lead wire. 4. check the overload protector. 5. Check the compressor.	1. The setting temperature is higher than the room temperature in cool mode. 2. The setting temperature is lower than the room temperature in heat mode. 3. Lead wire disconnected. 4. O.L.P. damaged. 5. Compressor damaged.
②	The motor does not operate.	1. Check the connection of the lead wire and switch. 2. Check the motor. 3. Check whether the unit is deicing.	1. Lead wire disconnected. 2. Switch damaged. 3. Motor damaged. 4. The unit is operating on the deice mode.
③	The cooling capacity is low.	1. Check the refrigerant for leak. 2. Check the evaporator condition. (freezing, clogging with dust, etc.) ※ The temperature difference between the air inlet side and air outlet side should be 12℃ at the minimum. ※ Standard state Indoor : 27℃, Outdoor : 35℃	1. The leak is caused by a pipe crack. 2. Shortage of the refrigerant. 3. Clean the evaporator, and air filter.
④	The heating capacity is low	1. Check the refrigerant for leak. 2. Check the evaporator condition. (freezing, clogging with dust, etc.) 3. Check whether the drain equipment (DRAIN PAN, DRAIN TUBE) is installed. ※ The temperature difference between the air inlet side and outlet side should be 12℃ at the minimum. ※ Standard state Indoor : 20℃, Outdoor : 7℃ ※ Adequate operating temperature • Heating : Indoor : 0℃~21℃ approx. Outdoor : 28℃ or less.	1. The leak is caused by a pipe crack. 2. Shortage of the refrigerant. 3. Clean the evaporator, and air filter. 4. Install the drain pan and drain plug.
⑤	Noise	1. Check the vibration of the pipe. 2. Check the propeller fan and blower for looseness and weakness. 3. Check the motor bearing for noise. 4. Compare the compressor noise with other compressors.	1. The pipe is in contact with other parts. 2. The tightening of the hexagon nut is faulty. 3. Damage of the motor. 4. Damage of the compressor.

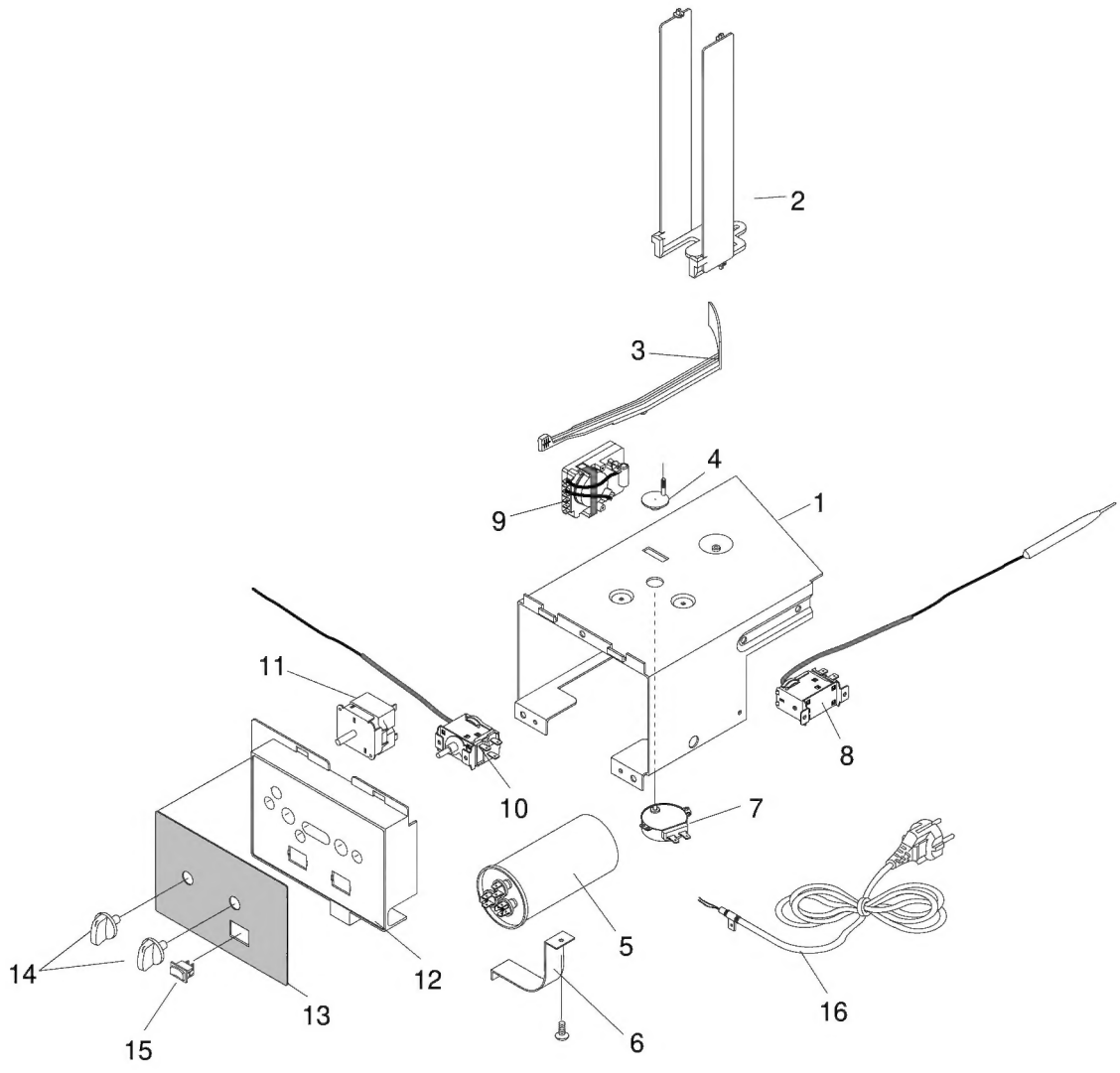
6. Exploded View and Parts List

6-1 Main unit



No.	Code No.	Description	Specification	Q'TY		Remarks
				AWH120JE	AWH123JE	
1	DB64-10145A	GRILL AIR INLET	HIPS	1	1	
2	DB63-30142A	GUARD AIR FILTER	HIPS	1	1	
3	DB64-70080A	PANEL FRONT	HIPS	1	1	
4	DB66-30169A	BLADE-H	PP	1	1	
5	DB96-40173A	ASSY EVAP	AWH120JE	1	1	
6	DB90-50133A	ASSY FRAME LOW	AWH120JE	1	1	
7	DB67-50073A	BLOWER	ABS+G/F	1	1	
8	DB65-10101A	CLIP MOTOR	SECC-P	1	1	
9	DB31-10145A	MOTOR	AMAFS110ZTEA	1	1	
10	DB67-50072A	FAN PROPELLER	ABS+G/F	1	1	
11	DB61-10152A	CASE COND	SECC-P	1	1	
12	DB90-50142A	ASSY FRAME UP	AWH120JE	1	1	
13	DB96-30272A	ASSY COND	AWH120JE	1	1	
14	DB63–10355A	CAP DRAIN	CR	1	1	
15	DB90-20198A	ASSY BASE	AWH120JE, 48F	1	1	
16	DB27-10030B	SOLENOID-COIL ASS'Y	AWH090ZE	1	1	
17	DB62-31722A	TUBE CAPILLARY ASS'Y	ID 1.7 L1300	1	1	
18	DB96-10591A	ASSY TUB 4 WAY V/V	ASS'Y	1	1	
19	DB95-10062A	ASS'Y COMP	48H124JV1E4	1	1	
20	DB72-50585A	CLOTHE SOUND	T35	1	1	
21	DB60-30028A	NUT WASHER	M8, ZPC	3	3	
22	DB73-10004A	GROMMET-ISOLATOR	EPDM	3	3	
23	DB63-10165A	COVER TERMINAL	NORYL, BLK	1	1	
24	DB60-30018A	NUT-FLANGE	M5, SM20C	1	1	
25	DB47-20001Z	OLP-POLYESTER	MRA12030-12008	1	1	
26	DB90-10586A	ASS'Y CABINET	ASS'Y	1	1	
27	DB63-30145A	GUARD-C/FILTER	PP	–	1	
28	DB93-40644A	ASS'Y CONTROL	AWH120JE	1	1	

6-2 Ass'y Control



■ Part List : ASS'Y CONTROL

No.	Code No.	Description	Specification	Q'TY		Remarks
				AWH120JE	AWH123JE	
0	DB93-40644A	ASS'Y CONTROL M	AWH120JE	1	1	
1	DB61-10153A	CASE CONTROL	SECC-P, TO.8	1	1	
2	DB66-30170A	BLADE-V	PP	1	1	
3	DB66-70024A	LEVER DAMPER	HIPS	1	1	
4	DB66-70022A	ARM-BLADE	ABS	1	1	
5	2501-001124	C-OIL	3.5/30μF, 450VAC	1	1	
6	DB65-10100A	CLIP-CAPACITOR	SECC-P, TO.8	1	1	
7	DB95-20065F	SWING MOTOR	M2LJ49ZU32	1	1	
8	DB47-20065A	THERMOSTAT DEICE	3Pin	1	1	
9	DB45-10009A	TIMER-DEFROST	D2506, 50Min	1	1	
10	DB47-20060A	THERMOSTAT	BUA-129	1	1	
11	DB34-90085A	SELECTOR-SWITCH	5PIN, 7STEP	1	1	
12	DB64-70081A	PANEL-CONTROL M	HIPS	1	1	
13	DB64-40169A	INLAY-CONTROL M	AWH120JE	1	1	
14	DB64-50138A	KNOB-THERMO	ABS	2	2	
15	DB34-90022A	SEESAW-SWITCH	6A, 250V, 2Pin	1	1	
16	DB39-10086A	POWER CORD ASSY	UCP-2	1	1	

8. Wiring Diagram

8-1 AWH120/123JE

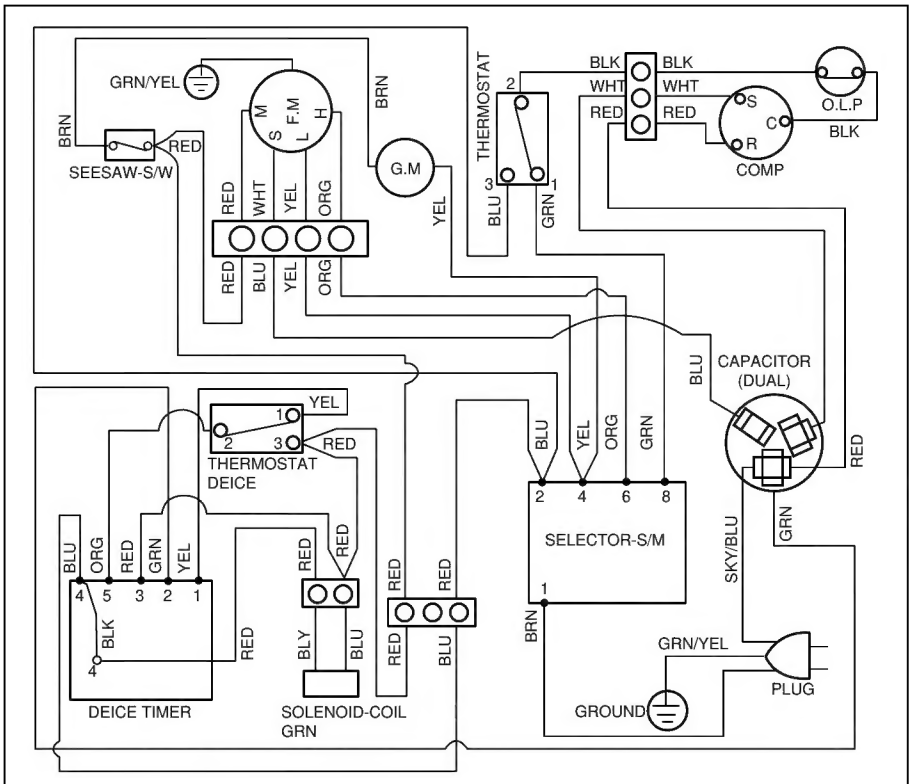


DIAGRAM-ELECTRIC (DB68-20670A)	CAPACITOR:3.5/30uF X 450VAC POWER SOURCE : 220-240V~/50HZ